

| Question | Answer  |
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| 13.      | $m\angle 4 = 54^\circ$ , and $m\angle 8 = 54^\circ$ , so $\angle 4 \cong \angle 8$ . $\ell \parallel m$ by the Conv. of the Corr. $\angle$ Post.  |
| 15.      | $m\angle 1 = 55^\circ$ , and $m\angle 5 = 55^\circ$ ,<br>So $\angle 1 \cong \angle 5$ . $\ell \parallel m$ by the Conv. of the Corr. $\angle$ Post.   |
| 19.      | $m\angle 1 = 105^\circ$ , and $m\angle 8 = 105^\circ$ ,<br>so $\angle 1 \cong \angle 8$ . $n \parallel p$ by the Conv. of the Alt. Ext. $\angle$ Thm.   |
| 21.      | $m\angle 3 = 75^\circ$ , and $m\angle 5 = 105^\circ$ .<br>$75^\circ + 105^\circ = 180^\circ$ , so $\angle 3$ and $\angle 5$ are supp. $n \parallel p$ by the Conv. of the Same-Side Int. $\angle$ Thm.                                  |
| 28.      | Conv. of the Alt. Int. $\angle$ Thm.  |
| 29.      | Conv. of the Same-Side Int. $\angle$ Thm.   |
| 33.      | $m \parallel n$ ; Conv. of the Alt. Ext. $\angle$ Thm.  |
| 34.      | $\ell \parallel n$ ; Conv. of the Alt. Int. $\angle$ Thm.   |
| 35.      | $\ell \parallel n$ ; Conv. of the Same-Side Int. $\angle$ Thm.  |
| 37a.     | $\angle URT$ ; $m\angle URT = m\angle URS + m\angle SRT$ by the $\angle$ Add. Post. It is given that $m\angle SRT = 25^\circ$ and $m\angle URS = 90^\circ$ , so $m\angle URT = 25^\circ + 90^\circ = 115^\circ$ .                       |
| 37b.     | It is given that $m\angle SUR = 65^\circ$ . From part a,<br>$m\angle URT = 115^\circ$ . $65^\circ + 115^\circ = 180^\circ$ , so $\overrightarrow{SU} \parallel \overrightarrow{RT}$<br>by the Conv. of the Same-Side Int. $\angle$ Thm. |

| Question | Answer   |
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| 41.      | The Reflex. Prop. is not true for $\parallel$ lines, because a line is not $\parallel$ to itself. The Sym. Prop. is true, because if $\ell \parallel m$ , then $\ell$ and $m$ are coplanar and do not intersect. So $m \parallel \ell$ . The Trans. Prop. is not true for $\parallel$ lines, because if $\ell \parallel m$ and $m \parallel n$ , $\ell$ and $n$ could be the same line. So they would not be $\parallel$ . |
| 42.      | Yes; by the Vert. $\angle$ Thm.; the $\angle$ that forms a same-side int. $\angle$ with the $55^\circ \angle$ measures $125^\circ$ . $125^\circ + 55^\circ = 180^\circ$ , so the same-side int. $\angle$ s are supp. By the Conv. of the Same-Side Int. $\angle$ Thm., $a \parallel b$ .   |